

REMARKS

Reconsideration and allowance of the above-identified application are respectfully requested.

Claims 1-5, 7-14, and 16-19 are pending, wherein claims 1, 9, 16, and 18 are independent. Claims 6 and 15 have been cancelled. Claims 1, 7, 9, 16, 17, and 19 have been amended. Claim 1 has been amended to incorporate the features that had originally been recited in claim 6. Claim 1 has been further amended, and claims 9 and 16 have also been amended, to incorporate the feature that the LCD device is configured such that ambient light reflected by the plurality of light reflective members does not change course, and a resulting brightness of a display of the LCD device is maximized. Support for these amendments can be found, for example, at page 18, lines 14-24, and at page 30, lines 9-24 of the originally filed specification. No new matter has been added by these amendments.

Claims 7, 17, and 19 have been amended to correct minor informalities, as referred to at Page 2 of the Office Action.

Applicant notes with appreciation the Patent Office's acknowledgement of a claim for foreign priority under 35 U.S.C. § 119 and that all certified copies of the priority documents have been received.

The drawings are objected to under 37 C.F.R. 1.83 (a) as allegedly failing to show every feature of claim 4. Applicant submits that in Figure 9B, there is an illustration of the light emission area being arranged in a first direction, the reflective members being arranged in a second direction, and the first direction and the second direction having a significant angle therebetween as viewed from the front. As described at page 21, lines 5-20 of the

specification, Figure 9B shows the non-transparent electrode (i.e, the light emission area, see page 17, line 9) "positioned at a 45-degree rotation relative to the directions of the arrangement of the reflective members in the LCD unit". Accordingly, Applicant submits that all of the features recited in claim 4 are illustrated in Figure 9B.

Claims 1, 2, and 3 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Applicant admitted prior art. Claims 4-9, 12, and 16 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Applicant admitted prior art in view of U.S. Patent No. 6,025,894 to Shirasaki et al. Claims 10, 11, 13, 14, 17, and 19 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Applicant admitted prior art in view of Shirasaki and in further view of U.S. Patent No. 4,142,773 to Avramenko et al. Claims 15 and 18 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Shirasaki. These rejections are respectfully traversed.

As amended, independent claim 1 recites a liquid crystal display (LCD) device comprising a LCD unit and a front light unit disposed at a front side of the LCD unit. The LCD unit has a plurality of light reflective members arranged in a matrix. The front light unit includes a light emission area for emitting light toward the LCD unit and a transparent area for passing light reflected from said light reflective members of the LCD unit toward a front side of the front light unit. The front light unit includes a transparent substrate, and a transparent electrode, an organic electroluminescent layer, and a non-transparent electrode, which are consecutively formed on said transparent substrate. The LCD device is configured such that ambient light reflected by the plurality of light reflective members does not change course, and a resulting brightness of a display of the LCD device is substantially maximized.

As discussed in the Office Action at Page 3, the Applicant admitted prior art discloses a conventional reflective type LCD having an LCD unit and a front light unit and a plurality of reflective members. However, as illustrated in Figure 1, the Applicant admitted prior art also includes a light guide plate 112 that is designed to change the course of the light that passes through it. This causes a reduction in brightness of the display of the LCD device, and it can also cause excessive scattering when foreign matter, such as dust or oil, adheres to the surface of the display. By contrast, as recited in independent claim 1, the LCD device of the present invention is configured such that ambient light reflected by the plurality of light reflective members does not change course, and a resulting brightness of a display of the LCD device is substantially maximized. Therefore, for at least this reason, independent claim 1 is patentably distinguishable from the Applicant admitted prior art.

In addition, it is admitted in the Office Action at Page 4 that the “Applicant admitted prior art does not expressly disclose the front light unit having a transparent electrode, an electroluminescent layer and a non-transparent electrode consecutively arranged as viewed toward a front side.” By contrast, as recited in independent claim 1, the front light unit of the present invention includes a transparent substrate, and a transparent electrode, an organic electroluminescent layer, and a non-transparent electrode, which are consecutively formed on said transparent substrate. Therefore, for at least this reason, independent claim 1 is patentably distinguishable from the Applicant admitted prior art.

As amended, independent claim 9 recites a liquid crystal display (LCD) device comprising a LCD unit and a front light unit disposed at a front side of the LCD unit. The LCD unit has a plurality of light reflective members arranged in a matrix. The front light unit

includes a transparent electrode, an electroluminescent layer and a non-transparent electrode consecutively arranged as viewed toward a front side. The LCD device is configured such that ambient light reflected by said plurality of light reflective members does not change course, and a resulting brightness of a display of said LCD device is substantially maximized.

Applicant submits that independent claim 9 is patentably distinguishable over the Applicant admitted prior art for the same reasons as discussed above with respect to claim 1.

As discussed in the Office Action at Page 5, Shirasaki discloses that a structure of an organic electroluminescent (EL) device has a reflection cathode electrode of a light-reflective metal (non-transparent) formed on a substrate of glass and an anode electrode of a transparent electrode material, e.g. ITO having a transmission property to the outside light formed on the entire surface of the organic EL layer, so that the light is emitted by the organic EL device. Furthermore, it is admitted in the Office Action at Page 5 that “the organic EL *device of Shirasaki is used as a back light for a LCD panel*” (emphasis added). Therefore, taking Shirasaki together with the Applicant admitted prior art, there is no disclosure of an LCD device comprising a LCD unit and a front light unit disposed at a front side of the LCD unit, wherein the front light unit includes a transparent substrate, and a transparent electrode, an organic electroluminescent layer, and a non-transparent electrode, which are consecutively formed on said transparent substrate. Accordingly, as amended, independent claim 9 is patentably distinguishable over Shirasaki for at least this reason.

In the Office Action at Page 5, it is stated that “it would have been an obvious variation [of Shirasaki] to use such EL device as a front light as long as the anode electrode (transparent electrode) would be arranged toward the LCD panel.” However, it is respectfully

submitted that this argument is incorrect in that the entire Shirasaki disclosure is directed very specifically to the use of an organic EL device as a back light of a liquid crystal display panel.

Shirasaki describes the advantages and disadvantages of both a front light (i.e., in Shirasaki, this is referred to as “a reflection type LCD apparatus”) and a back light configuration at column 1, lines 19-43. Then, in the Detailed Description of the Preferred Embodiments, Shirasaki describes the structure of the LCD panel as a back light configuration at column 11, line 50 through column 12, line 61. Thus, by intentionally describing only a back light configuration within this context, Shirasaki effectively teaches away from the use of a front light configuration.

Independent claim 16 recites a method for manufacturing a liquid crystal display (LCD) device comprising the steps of forming a LCD unit having a plurality of reflective members arrayed in a matrix, forming a transparent electrode in front of said LCD unit, forming an electroluminescent (EL) layer on said transparent electrode, and forming a non-transparent electrode disposed on said EL layer and having a specified pattern, and arranging said plurality of reflective members such that ambient light reflected by said light reflective members does not change course, and a resulting brightness of a display of said LCD device is substantially maximized. Independent claim 18 recites a method for manufacturing a liquid crystal display (LCD) device comprising the steps of forming a non-transparent electrode having a specific pattern on a transparent protective member, forming an electroluminescent (EL) layer on said non-transparent electrode, forming a transparent electrode on said EL layer, and forming a LCD unit at a rear side of said transparent electrode.

Each of independent claims 16 and 18 includes the element forming a combined transparent electrode, EL layer, and non-transparent electrode on a front side of a LCD unit. Thus, each of these claims requires a front light unit including this combination, similarly as in claims 1 and 9. Therefore, each of these claims is patentably distinguishable from both the Applicant admitted prior art and from Shirasaki for the reasons described above with respect to claims 1 and 9.

Accordingly, it is respectfully submitted that each of independent claims 1, 9, 16, and 18 is allowable over the cited references. Furthermore, claims 2-5, 7, 8, 10-14, 17, and 19 each depend from one of the aforementioned independent claims, and is therefore allowable over the cited references for at least the reasons discussed above. Reconsideration and withdrawal of these grounds of rejection are respectfully requested.

All of the rejections raised in the Office Action having been addressed, it is respectfully submitted that the present application is in condition for allowance, and a notice to that effect is earnestly solicited. Should the Examiner have any questions regarding this response or the application in general, the Examiner is urged to contact the undersigned at (212) 940-8800.

Respectfully submitted,
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